

Inventor: NYSTRON
Serial No.: 09/878,347
Filing Date: 06/12/2001
Examiner: Langel
Group Art Unit: 1754

REMARKS

The claims have been rejected as being either anticipated by or obvious in view of Schreyer et al, Giesselmann et al, or Goor et al. Applicants respectfully disagree.

According to independent claims 1 and 20 of the present application, the working solution comprises at least one quinone solvent and at least one hydroquinone solvent, wherein said quinone solvent comprises isodurene in an amount from 15 to 100 wt%. Such working solution has neither been disclosed nor suggested by any of the cited documents.

Giesselmann et al discloses a process wherein the working solution may consist of a single solvent, i.e., a liquid triazine. The triazine can also be used in admixture with known quinone or hydroquinone solvents. The triazine should be **at least 15% of the total solvent** by volume. Giesselmann only mentions isodurene as one possible quinone solvent among many. However, Giesselmann is silent as to the composition of the quinone solvent (if used at all). In Example 2, a mixed solvent containing 50% of alkyl benzenes having a boiling point between 180 and 220°C is used.

Schreyer et al likewise mentions isodurene as only one possible solvent among many, and provides no guidance to preferentially select isodurene over the myriad choices of alkyl substituted aromatics encompassed by the boilerplate language of column 2, lines 1-11 of the reference.

Goor et al discloses a process wherein the working solution may consist of a single solvent, i.e., tetrasubstituted ureas.

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The ureas can also be used in admixture with known quinone or hydroquinone solvents. Isodurene is only mentioned as one possible quinone solvent among many. Claim 12 specifies a volume ratio of urea to aromatic hydrocarbon from 10-50 parts of urea to 90-50 parts of aromatic hydrocarbon. However, Goor is silent as to the composition of the quinone solvent (if used at all). In Example 4, a solvent mixture consisting of 70 parts by volume of an alkyl benzene mixture is used.

The present invention, on the other hand, is based on the finding that when using isodurene in an amount of 15 to 100% of the **quinone solvent**, the quinone solvent will have an improved quinone dissolving capacity. Accordingly, it is possible to decrease the total amount of quinone solvents and instead increase the amount of hydroquinone solvents, and thereby increase the solubility of both quinones and hydroquinones (p. 2, lines 9-13), as also illustrated in Example 2.

Example 2 of the application demonstrates the effect of increasing the content of isodurene of the quinone solvent from 10% to 45% by mixing Shellsol™ AB (a regular mixture of aromatic hydrocarbons of mainly C₁₀ and C₉ alkyl benzenes, such as used in the examples of Giesselmann et al, Schreyer et al, and Goor et al) with technical grade isodurene. As clearly seen, there is a substantial increase in the total content of quinones (+22%), and in the hydrogen peroxide limit (+25%) of the working solution, as compared to a regular alkyl benzene mixture, such as used in the prior art by Giesselmann et al, Schreyer et al, and Goor et al.

Clearly the above effect has not been realized or recognized by any of Giesselmann et al, Schreyer et al, or Goor et al,

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either alone or in combination. Since all of the cited references are silent as to the composition of the quinone solvent, let alone any advantages derivable therefrom, one skilled in the art would not be led to the working solution of the invention. Claims 1-20 are therefore neither anticipated nor obvious in view of the cited references, and a Notice of Allowance is therefore requested.

Respectfully submitted,

19 Nov 2003
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I hereby certify that this correspondence is being transmitted by facsimile this day to Examiner Wayne Langel at the United States Patent and Trademark Office, Art Unit 1754, to fax No. 703-305-7718.

19 Nov 2003 David J. Serbin
Date Signature